

IMPULSIVE VERSUS REALISTIC THINKING: AN EXAMINATION OF THE DISTINCTION BETWEEN PRIMARY AND SECONDARY PROCESSES IN THOUGHT¹

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Because we so commonly characterize Freudian psychoanalysis as a dynamic psychology, or a developmental psychology, or a psychology that emphasizes conflict or the relief of symptoms, we tend to translate the conceptions of psychoanalysis into an active mode. This tendency sometimes causes us to overlook the fact that psychoanalysis is very largely a *cognitive psychology* concerned primarily with mental representations, with hallucinations and dreams, with memories, their distortions and repression, with attention and inattention. Of course one might say that all psychology was mentalistic when Freud was writing, and that he was really talking about overt behavior and not about symbolic behavior. This I believe to be incorrect: Freud was very much concerned about symbols; his mental representations, condensations, displacements, and the rest are essentially cognitive. It is appropriate for us to consider Freud's views in this symposium, for his psychology was at once a cognitive psychology and a psychology of motivation.

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The basic cleavage in thought, according to Freud, is between two processes, the earlier and more primitive *primary process*, and the later more orderly, rational, and reality-oriented *secondary process*. I wish to examine this distinction to see of what service it might be within general psychology.

The distinction between the illogical and impulsive in thought, on the one hand, and the logical and rational, on the other, is of course a very old one, and is not original with Freud. Every elementary logic course points out the circumstances that lead to fallacious thinking, and these include the *argumentum ad hominem*, and other kinds of argument that permit prejudice to blind judgment. The notion that "the wish is father to the thought" did not begin with Freud. Contemporary writers, too, such as Piaget and Werner, arrive at distinctions between earlier and later modes of thought. Hence some such distinction as that which Freud makes between primary and secondary process is plausible enough.

The question for us to face is not whether this distinction is plausible, but whether there are novel features in Freud's conception that are important, whether the concepts are clear, and whether there are suggestions for empirical work deriving from them.

TWO PROCESSES ACCORDING TO FREUD

The distinction between primary and secondary processes is so perva-

sive in psychoanalysis that it often receives scant mention by psychoanalytic writers who fully accept it. This may be in part because the terms belong to the metapsychology, and the clinical literature of psychoanalysis is commonly not expressed in these terms. The more theoretical discussions of psychoanalytic theory invariably find a central place for these processes. Freud's biographer says: "It was this distinction on which rests Freud's chief claim to fame: even his discovery of the unconscious is subordinate to it" (Jones, 1955, p. 313), and the translator of his *Interpretation of Dreams* says in a footnote: "The distinction between primary and secondary systems, and the hypothesis that psychical functioning operates differently in them, are among the most fundamental of Freud's concepts" (Freud, 1953, p. 601). It is of some interest, therefore, to review the attention that Freud gave these terms, and then to try to assess their meaning for a general psychology of cognition.

Freud introduced the terms in his *Project for a Scientific Psychology*, prepared in 1895, but not published until after his death along with his letters to Fliess. The first mention was in a letter to Fliess dated October 20, 1895, with reference clearly to the *Project* upon which he was then working. The relevant section in the *Project* is entitled "Primary Processes: Sleep and Dreams" (Freud, 1954, pp. 397-404). Here most of the later ideas are anticipated, although at this stage they are couched as a speculative neuronal theory—a theory that at least one competent reviewer finds to be in many ways an anticipation of contemporary developments in neurophysiology (Pribram, 1962).

The next full-scale discussion is in the *Interpretation of Dreams*, with the relevant section entitled "The Primary and Secondary Processes: Repression" (Freud, 1953, pp. 588-611). Freud returned briefly to the problem from time to time thereafter, the most important single paper being "Formulations on the Two Principles of Mental Functioning" (Freud, 1958). Later papers helped to coordinate the two processes with later developments in the theory, such as the new "death instinct" (Freud, 1955) and the new id, ego, superego structures (Freud, 1961).

The most painstaking effort to understand what Freud meant and to cast what he said into the form of conceptual models was made by Rapaport in a series of papers (Rapaport, 1950, 1951a, 1951b, 1957, 1959, 1960; Rapaport & Gill, 1959), all of which bear in one way or another on the problems of motivation in thinking. The main conclusion to which Rapaport came is that there are two kinds of organization of memory which become reflected in the two kinds of thinking: drive-organization² and conceptual-organization, the former representing, of course, primary process, the latter secondary process.

In carrying through the conceptual

* It is not possible in a brief paper to deal with all the puzzling problems that are raised in trying to be at once appreciative and critical of psychoanalysis. In accepting the *drive* concept from psychoanalysis, and coordinating it with what most psychologists mean by drive, we overlook a rigidity within writers on classical psychoanalysis who recognize only two drives (sex and aggression), despite the primitive nature of pain, hunger, thirst, temperature, contact, curiosity, manipulation, and the other candidates for inclusion as drives. Freud did not settle the matter once and for all in 1920 when he proposed the death instinct, which for his followers made aggression a second drive along with sex.

distinction between primary and secondary process, Rapaport deduced from Freud primary models of action, cognition, and affect (indicating their characteristics when primary process is in control) and secondary models of each of these, when the delays of secondary process are introduced (Rapaport, 1959, pp. 71-78). The primary model of *action* is that familiar in the drive-reduction theory of motivation: aroused drive-tension, presence of the incentive and response to it (in psychoanalysis, sucking the mother's breast), followed by drive reduction. The primary model of *cognition* is aroused drive tension in the absence of the incentive, leading to hallucination of the incentive. Finally, the primary model of *affect* substitutes affect discharge for hallucination. Thus the hungry infant may scream instead of hallucinating the breast. All primary models indicate prompt response to the drive that reaches threshold intensity; all secondary models introduce delays. The secondary model of action introduces a derivative drive (similar again to learning theories that study the drive value of familiar paths and the secondary reinforcement value of sub-goals). The role of inhibition (in the absence of the goal-object) is also stressed; again something familiar in the learning-theorist discussion of frustration-induced drives (Amsel & Roussel, 1952; Marx, 1956). The secondary model of cognition substitutes for the hallucination of the object a search for it, i.e., ordered thinking. The secondary model of affect substitutes for massive affect discharge a lesser anticipatory discharge that serves instead as a signal; behavior may be released which defends against the more massive affect discharge. There are complexities

within each of these models that this brief summary cannot deal with.

Some of the characteristics of the two processes which we need to examine in relation to a general theory of thinking are the following:

1. Primary process is earlier in time and more primitive than secondary process. This does not mean that it is ever outgrown, however, for primary process functioning is characteristic of the normal adult as well as the infant, e.g., in dreams.

2. When the primary process holds sway, wishing ends in hallucinating; the infant is said to hallucinate the satisfaction of its internal needs when they cannot be gratified at once. Massive affective discharge is an alternative.

3. Primary process is coordinated with the pleasure principle, secondary process with the reality principle.

4. The pleasure principle "reigns unrestrictedly in the id" and the ego endeavors to substitute the reality principle.

5. The formal characteristics of primary and secondary processes differ, the characteristics of primary process being inferred largely from dreams. Thus the disregard for space and time and for ordinary logic is typical of primary process; the processes that Freud called the dream-work are primary ones, especially condensation, displacement, and symbolization.

6. Primary process involves "mobile cathexis" and the manipulation of large quantities of energy; secondary process involves "bound cathexis" and operates with small amounts of energy. The interaction between primary and secondary processes is conflictual, involving repression, defense, and the like.

7. Primary process is compelling, peremptory; secondary thought ac-

tivity (practical thought, rational thought) we can "take or leave" (Rapaport, 1959, p. 76).

8. Primary process thinking in conscious subjects may be found "either out of strength or out of weakness" (Holt & Havel, 1960, p. 267). That is, primary process thinking may emerge out of ego weakness (as in a psychotic state) or because a person regresses to primary process thinking for fun or in order to open himself to creative ideas. This has come to be called "regression in the service of the ego" (Kris, 1952; Schafer, 1958).

Here then is a rich store of ideas. For these ideas to become a part of general psychology we need, first, to understand the theory in its own terms, second, to criticize it, and eventually, to reconstruct it. The ultimate contribution of Freud does not rest on a decision whether he was right or wrong; eventually we want to know more than he knew, but if he helped to stimulate the search that will tribute enough to him.

FREUDIAN CONCEPTIONS EXAMINED

Let us pass quickly over some of the general ideas that in one form or another everyone finds acceptable. Some kind of *genetic-developmental* theory of thinking is acceptable, and a number of these have of course been proposed, such as those of Piaget (1955) and Werner (1948). The details are a matter of some uncertainty, but there is probably some kind of continuous development rather than a saltatory or discontinuous transition from one stage to the next. The Freudian theory can be conceived in this continuous way, for primary process is never completely displaced by secondary process (Burstein, 1959). Freudian conceptions have been compared with those of

Piaget by Wolff (1960).³ Also some kind of contrast between prelogical, concrete, impulse-driven thinking and more abstract, dispassionate, realistic thinking (both forms found in the adult), is acceptable. It is important here, however, to know just what we are talking about, and Freud rests his case on the dream as the prototype of primary process; this can be objected to either on the grounds that dream thinking is not a good representative of illogical and fallacious thinking (even though it manifests these characteristics), or that Freud gave a one-sided picture of what dream thinking was like. French, who believes that dreams are attempts at problem solving and are more orderly than Freud thought, has reanalyzed Freud's Dora case in these terms (French, 1954, pp. 10-18).

The most controversial features of the Freudian scheme, either because they are unclear, unproven, or disputed, seem to me to be: (a) the theory of the interplay between the pleasure principle and the reality principle, especially in the negative definition of pleasure as tension-reduction, and the separation between affect and cognition, as implied in the notion that affect discharge is an alternative to hallucination as a

³ While the tenor of Wolff's monograph is that the coordination of Piaget and Freud should be rather easy, he has given some penetrating analyses of their differences, particularly in the first stage of development, where the primary-secondary process distinction is most cogent. Here he points out that according to Piaget the organism's fundamental tendency is to assimilate the environment to itself, while Freud's theory is that it tries to rid itself of all stimulation (Wolff, 1960, p. 60). The development of ego-psychology within psychoanalysis now makes it easier for the classical analyst to accept early interaction with the environment, while not giving up any of his long-held views about intrapsychic processes.

means of primary tension reduction; (b) the conjecture that the infant hallucinates the absent incentive; and (c) the energetics involved in the contrast between primary and secondary processes. Each of these deserves some comment.

The tension-reduction theory of motivation has come in for a number of attacks, and attention has gradually shifted from the negatives of tension relief to the positive role of incentives (e.g., Hilgard, 1956, pp. 427-433; White, 1959). Freud's pleasure principle, while somewhat more complex than the typical motivational theory of the experimental students of learning, subjects Freud to the same kind of criticism, for example, for his neglect of joy and hope among the affects (e.g., Schachtel, 1959, pp. 19-21). This issue is being fought out within general psychology, and it would not take too much doctoring to fit the Freudian theory to whatever the outcome is.

A most original feature of Freud's theory is that the infant hallucinates the absent object. This is of course conjecture, based upon the predominantly visual nature of dreams, but the conjecture occurs repeatedly in Freud's writings. It should be noted that this cannot be mental activity at its earliest, for the hallucination is a *memory*, and some theory of prior perception and recovery is implied. The pleasure principle may be conceived to operate before modes of thought have developed at all. At one point Freud used the illustration of the bird inside the egg, with the nutrients there to be had immediately; the wish for nutrients cannot be distinguished from the availability of nutrients (Freud, 1958). Through some further steps, made necessary in human development because the object of gratification is not

always there, *attention* and *memory* develop, and, out of them, *thought*. This is the course of development in the direction of the reality principle, but one thought-activity is split off: that is fantasy making. This is then the primary process that persists in thinking after secondary process thinking has also developed. The fact that the fantasy does not actually bring relief means that secondary process thinking must develop almost simultaneously; we are probably dealing with a ratio of the two processes from the start, more primary process gradually giving way to more secondary process.

How plausible is the conjecture that the infant hallucinates in response to its needs? Evidence would be hard to get, although working backwards by analogy from EEGs and eye movements in hallucinating adults we might be able to get some evidence; to my knowledge this does not exist. The truth is probably a metaphorical one, emphasizing the tendency of thought to move to the concrete, the specific, the pictorial, and attributing to the infant what is found in adult dreams and in the hallucinations of deprived adults (the mirage on the desert) and psychotics. The tendency for more primitive thought to take concrete forms is not without support in experimental studies, for example, the concrete-abstract distinction of Goldstein and Scheerer (1941), and the greater ease of attaining concrete over abstract concepts in general, for example, Heidbreder, Bensley, and Ivy (1948), and Grant (1951). Freud apparently was not completely satisfied with his treatment of hallucinations; at one point he suggested that the *negative* hallucination (i.e., denying the presence of stimulation) might be a better point of departure than the

positive hallucination from which to start an explanation (Freud, 1957).

The energy concepts within Freudian psychology are difficult ones at best and pose a number of problems (Colby, 1955; Hilgard, 1962). The term *cathexis* in Freudian theory is used for some kind of energy charge, but the analogy with physical energy is not a close one; the meaning is much more that of *interest*, or *attention*, or of Lewin's *valence*. In any case a highly cathected idea comes to awareness (i.e., can be attended to) in competition with less cathected ones and can be driven out of awareness by countercahexes. The notion of *mobile cathexis*, used in discussing primary process, is that, as Holt and Havel (1960) put it, "an idea and its cathexis are easily parted"—the search pattern or drive that can cause one idea to be cathected may as well cathect another one. Hence one idea easily substitutes for another in a dream. An idea and its cathexis are more closely bound when secondary process operates: when one idea is searched for in memory, or somehow comes across the threshold because of the state of its cathexis in relation to competing ideas, it comes in stable, reliable form. Poetry tends to deal in more mobile cathexes than science does ("to take up arms against a sea of troubles" versus "sea water contains sodium chloride"). Dealing with the distinction between primary and secondary process in terms of cathexes is metaphorical, but it communicates something that is comprehensible; still one is never sure but what he is missing something.⁴ In addition to mobile and

bound energy there is neutralized energy (Freud, 1961; Kris, 1950), referred to as delibidinized, deaggressivized, or sublimated. These forms are all said to have their roots in the innate drives (sex and aggression) but have been transformed from primary process so as to be at the service of secondary process; there may also be forms of neutralized energy that do not come from drives (Hartmann, 1950). Once neutralized energy is accepted the dichotomy between primary and secondary processes becomes less sharp (Rapaport, 1959, p. 92).

Another problem of energy in primary and secondary processes has to do with *amounts*, large amounts being involved in primary process, small amounts in secondary process. This is a little confusing because in physical outcome primary process tends to go on while the person is immobilized in sleep and incapable of putting out much energy; secondary process permits the physical outcome of energetic control over the environment. It is necessary to be repeatedly reminded that we are talking about amounts of psychic energy and not physical energy. Actually the matter has not been stated quite properly here: in primary process the quantity of energy dealt with is large because it is mobile and all discharged at once. This is what gives primary process manifestations their insistent quality; they, so to speak, "take over." The total quantity of energy dealt with in secondary processes

⁴ Obscure ideas sometimes seem less obscure to those who use them simply because they become familiar. Cathexis is, in fact, a very obscure idea; as in the case of other obscure ideas it becomes a difficult problem to determine when such an idea is merely ob-

scure and when it is also profound. Attempts to clarify the concept have thus far not been very helpful (e.g., Rapaport, 1959, pp. 125-129). There is no doubt that the notion of cathexis attempts to deal with deep psychological problems, e.g., how the registration of a past experience stored in the nervous system becomes available to consciousness, how symbolization occurs. The question is how well it *solves* these problems.

may be the same, but its *regulation* is through small quantities of energy, just as a small thermostat may control a large heating plant. Hence secondary process is more finely tuned and can be turned on and off as primary process (usually) cannot be.

In order to take these ideas out of their metaphorical context and place them nearer to general psychology, we can look for some resemblances to familiar ideas:

1. Free association is more like primary process than controlled association because in controlled association we insist on bound cathexes, that is, on "appropriate" replies, as when we ask for a part-whole relationship, or a large-small relationship, and then give one member of a pair and ask for an associate. In free association, anything will do, so long as an answer is given. Under these circumstances (and this is where Freud comes in) unconscious factors are likely to provide the missing intermediaries between stimulus and response.

2. Some persistent ideas (as in obsessions) have about them a driven quality, as though we are helpless about them; they seem to happen from without, as though they happen *to* us rather than *by* us. Thus we do not feel ourselves to be the stage managers of our dreams. This is what is meant by the immediate and powerful discharge of primary processes.

3. We sometimes distinguish the affective consequences of punishment from the informative consequences. Too much affect may produce what Thorndike called irrelevant emotion; according to the Yerkes-Dodson law too much punishment interferes with learning. Thus the massive involvement of affect is inhibiting to realistic cognitive activity; if the affect comes

in smaller doses, then the organism can profit by it in learning its way around. Here we have a clue to Freud's notion that secondary process experiments with small amounts of energy. The notion is also related to modern information theory, which distinguishes between the control mechanisms and the power operations that are controlled. Rapaport has noted this possible parallel (Rapaport, 1959, p. 91).

4. The opposition between primary and secondary processes is tempered somewhat in the notion of regression in the service of the ego earlier referred to; it is a regression from which one can escape, so that it does not have the full peremptory quality usually assigned to primary process. That is, we can go to a "kid party" and then change our clothes and become adult; we are not committed to hebephrenia by this act of temporary regression. The original discussion of regression in the service of the ego (Kris, 1952) is a very sketchy one; the best elaboration is by Schafer (1958). There is a curious quality about Schafer's account, however. He gives six conditions facilitating regression in the service of the ego; these are all conditions of good mental health or ego strength, and as he reviews them himself he sees that they are not quite appropriate to gifted artists, comics, and scientists (who are supposed to use regression in the service of the ego unusually well). He resolves this problem by indicating that such regressions may serve different individual purposes. The trouble is probably not with his account but with the concept itself. Probably more is involved than that a regression permits primary process thoughts to appear. One might think of several possibilities, such as (a) a capacity for regressive experiences, for ex-

ample, richness of imagination; (b) a tolerance for regressive experiences, for example, lack of anxiety when thought and imagination are given free range; and (c) skill in the utilization of regressive experiences, for example, ability to convert fantasy into acceptable artistic or other creative products, including humor.⁵ These, or other aspects, may mean that the experience called regression in the service of the ego has several dimensions. Schachtel (1959, pp. 244–248) objects to the notion that the experiences are regressive at all; a certain openness to new ideas need not be regressive, but is better interpreted, he believes, as progressive.

When all the trappings of the theory of primary and secondary processes are removed there remains much in the major distinction that is plausible and familiar: enough to invite an examination of the more obscure conceptions.

SOME QUESTIONS SUBJECT TO ANSWER

Let us now grant that as reference-concepts the primary and secondary processes are useful, and see how we can go on from there, outside the special framework of the Freudian metapsychology. The basic classification, following David Rapaport, is between *drive organized* and *concept organized* memories as they enter into our thought processes. If primary process rules out thinking, the vehicles of thought, the ideas to which we can attend, are brought to awareness by the impulses or drives that are stirred up; thus our memories are drive organized. If my reactions to my boss are dictated by an unperceived relation between him

and my father, then my thoughts of the boss are drive organized. If secondary process rules my thinking, then I may use what I have learned from interacting with my father, but I know my boss is not my father, and I react to him in accordance with the demands of the actual social situation. In this case, my thought is concept organized, according to the lines of command within the organization in which I work, the assignment I am working on, and so on. We have long been taught to distinguish between *reasoning* and *rationalization*; the former representing thought under the conceptual mode, the latter thought that is impulse driven.

If we grant the distinction between primary and secondary process, or drive organized and concept organized thought, then we have to decide how we are to use this distinction in talking about the wide range of things people do when they think. There are two chief ways of using a twofold scheme of this kind, one as a *dimension*, the other as a *mixture*.

The dimensional scheme takes off from the notion of growth, and assumes that primary process is primitive and early, secondary process more mature and later. One can then draw a line with primary process at one end and secondary process at the other, and place any act of thought along this line. The thoughts that are represented in the middle are *fusions*, if you wish, with some aspects of primary process and some aspects of secondary. I suppose one could go to a modern art exhibit and place the pictures along such a continuum, with the totally nonrepresentative pictures at one end, corresponding to impulse, with photographic representations of reality at the other; those in between would be the kinds of distorted or stylized pictures that combine impulse with

⁵ Some of these distinctions have been made by Ås, O'Hara, and Munger (1962) in attempting to discover regression-like experiences related to hypnotic susceptibility.

reality. This scale would be a kind of analog of a scale from primary to secondary process. The dimensional position is the one favored by Rapaport (1951a, 1951b), Hartmann (1950), Kris (1952), Holt and Havel (1960).

The *mixture* scheme suggests that primary process and secondary process remain to some extent distinct, but one intrudes upon the other; their conflicts are compromised in various ways, but there is characteristically enough vacillation between them to keep their identities intact. As one grows older a larger part of his thought tends to be of the secondary process kind, but he reverts to primary process thinking in dreams and fantasy.

These two ways of schematizing the relationship between primary and secondary process can only be distinguished if the conceptual models are clear, for it is often hard to tell the difference between a fusion (implied in the dimensional scheme) and a mixture (implied when the two processes fight it out, but each continues its own existence).

These notions are too abstract to deal with unless we have some examples before us. Let us consider some examples of thinking.

1. A schizophrenic patient says to his physician: "I am 75 years old." The physician says to him: "You feel that you have suffered three times as much as most 25-year-olds." If the interpretation is correct, the patient has distorted reality, assigned himself a false age, as an expression of affect. But in so doing he has multiplied 25×3 correctly. The primary process interpretation is that the ideas that he manipulates come from his store of memories by way of impulse. He does not remember the age based on his birth certificate; he remembers the phenomenal time

through which he has suffered. The fact that he can manipulate these ideas correctly does not deny their primary process origin.

2. A hypnotized subject is told that he is about to hear a very funny joke. The hypnotist tells him: "The whale is the largest living mammal." He laughs as though his sides would split. Aroused from the hypnotic state he is asked why this was so funny. One subject says: "It really wasn't funny. I just had a sort of laughing fit." Another says: "You should have seen the funny whale I pictured with a long snout and tiny legs. It sure was funny!" In the first of these, impulse and cognition were not fused, in the second they were.

3. A hypnotized subject is shown a small metal box with one real light on the left, but told that there are two lights, one on the left and one on the right. He sees both lights. Asked if they are both real, he says, "Yes." Told that one of them is *not* real, but to find which is which, he says: "The one on the right is not real; it casts no reflection in the metal surface, as the one on the left does." If the hallucination signifies primary process, the successful problem solving is secondary process. Here both go on simultaneously, but they remain distinct; the hallucination is not destroyed by the knowledge that it is not real.

4. A subject who volunteers to be hypnotized for the first time by a technique in which gradual eye-closure is suggested, raises his arms before his chest, moans, and sobs. Roused from hypnosis, he can give no account of any ideas associated with the display of affect. In a later interview outside hypnosis childhood memories were reviewed, and he demonstrated how he cowered in a chair when he was beaten by his mother. He re-enacted in the inter-

view the positioning of his hands, his tightly closed eyes, his moaning and sobbing. His behavior in the hypnotic situation can be interpreted as the reactivation of a memory (non-verbal reactivation in this case) on the basis of some similarities between the hypnotic induction and the earlier submission to authority. This memory was drive organized rather than concept organized; it did not, however, involve hallucinations.

5. A subject who has just undergone a hypnotic session without very much success, when leaving the experiment suddenly experiences a spontaneous regression: she finds that her body is shrinking and she is becoming a small-sized girl again. Somewhat frightened by this distorted body-image, she looks about her to see that the world of objects has not changed, and she becomes her own size again. She is able to switch the experience on and off. For a while her regressed body-image coexisted with a real world; it is an important principle that in a regressed state not everything is regressed.

I have here given five illustrations to show what kinds of problems are to be faced in trying to assess primary and secondary process thinking, particularly in formulating them clearly enough to decide whether one should talk about fusions, or mixtures, or both.

Perhaps these illustrations themselves suggest experimental problems. I should like to suggest that more careful study of fantasy productions, eidetic images, and hallucinations will make important contributions, provided these studies are guided by theory. Hypnotic experimentation, from which most of my illustrations were drawn, provides a convenient way of getting into these areas, but other methods are available. Robert Holt and his associ-

ates, for example, have been studying primary process manifestations in Rorschach responses (Goldberger, 1958; Goldberger & Holt, 1958; Holt, 1956; Holt & Havel, 1960). Presumably there should be more secondary process in the TAT, and this might be a good place to examine the problem of fusion versus mixture.

Let me say a word about eidetic images. These have been very little studied in recent years, yet they can be detected when they are looked for. We find a good deal of evidence of their presence among our more hypnotizable subjects. The subject who was told stories by an Irish grandmother who believed in (and had actually seen) Leprechauns, has little trouble in seeing Leprechauns herself, as eidetic images. These are now memory images from childhood, but they bring a kind of gratification that is close to the original meaning of primary process, even though the gratification is derivative from the grandmother. The subjects in our sample who have these images tend *also* to be highly verbal and communicative, by contrast with the nonhypnotizable subjects who lack both fantasy and easy verbal expression. One might suppose words to be representative of secondary process, but they are heavily loaded with primary process too. Thus poetry, a verbal art, uses many of the same devices as the dream. There are many problems here.

A symposium is a good place to throw out problems for discussion, even though answers are hard to come by. Let me summarize some of the issues:

1. Is it possible to sharpen the characterization of primary and secondary process thinking so that the delineation will be clearer than it now is? For example, when is hallucination an essential part of primary process thinking?

2. In dealing with any illustration of thinking that we wish to classify in primary-secondary process terms, do we do better to describe *aspects* of the thinking as primary and secondary functioning, so as to place the illustration on a continuum, or do we describe the mixture and vacillation between the two processes? Or do we need a more complex model that encompasses *both* fusions and mixtures?

3. What kinds of experiments can we set up to help us sharpen these distinctions and bring them into line with our other ways of conceptualizing thinking and problem solving? For example, Charles Fisher's (1960) perceptual experiments suggest the possibility that less clearly perceived (perhaps subliminal) material tends to be recovered in memory through drive organized memories, while more clearly perceived material tends to evoke concept organized memories. Here is certainly the kind of hypothesis that can be put to test, once our criteria of the two types of organization are clearly formulated.

SUMMARY

1. Freudian psychology is in many respects a cognitive psychology, concerned as it is with hallucinations, dreams, memories, symbols, and dis-

tortions of the thought process. It is at once a cognitive psychology and a psychology of motivation.

2. The distinction between primary and secondary processes is a very central one within psychoanalytic theory. The nature of these processes as described by Freud, and interpreted by Rapaport, is best summarized by asserting that there are drive organized and conceptually organized memories that enter into the two kinds of thinking.

3. Some of the problems of the Freudian theory are examined, and the plausibility of the theory is considered in the light of other approaches to the same phenomena. The theory is plausible, but much of its theoretical basis is obscure.

4. Some illustrations are given of the kinds of thought situations that raise questions about the two processes, whether a particular example should be viewed as a fusion of the processes or as a mixture of them. The answer is not clear, and a complete model might have to include both fusions and mixtures, if the distinction between the two processes is to be retained. There are empirical approaches to the problems possible by way of projective tests, hypnosis, and the experimental study of perception and dreams.

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